REMARKS

Claims 1-23 are pending in this application, stand rejected, and are at issue herein. Reconsideration of claims 1-23 in view of the following remarks and indication of their allowability at an early date are respectfully solicited.

The Examiner has rejected claims 22 and 23 under 35 U.S.C. §101. Specifically, the Examiner states that these claims do not have any practical use as they only list a set of instructions that are saved on a computer-readable medium with no function or use. This ground of rejection is respectfully traversed. Reconsideration of this ground of rejection and indication of the allowability of claims 22 and 23 at an early date are respectfully solicited.

The applicants note that this ground of rejection is set forth for the first time in the third non-final action for this application on claims that have remained unamended throughout prosecution. However, 37 C.F.R. §1.104(b) specifically requires that each of the Examiner's actions will be complete as to all matters. See MPEP §707.07 et seq. Indeed, MPEP §707.07(g) states "Piecemeal examination should be avoided as much as possible. The Examiner ordinarily should reject each claim on all valid grounds available ... major technical rejections on grounds such as lack of proper disclosure, lack of enablement, serious indefiniteness and *res judicata* should be applied where appropriate even though there may be a seemingly sufficient rejection on the basis of prior art." While this §707.07(g) does list four situations where examination may best be accomplished by limiting the action (i.e., application too informal, undue multiplicity of claims, misjoinder of invention, or claims directed to perpetual motion), this application falls into none of these grounds. As such, the applicants respectfully submit that the application of this new ground of rejection for these originally filed and unamended claims at the third Office Action constitutes piecemeal examination, and is, therefore, improper. Reconsideration of this ground of rejection is therefore respectfully solicited.

Further, claims 22 and 23 each are directed to a computer-readable medium having stored thereon a particular data structure. As such, they qualify as an article of manufacture, which is statutory subject matter under 35 U.S.C. §101. Further, computer-readable media have substantial utility, i.e., real-world use. See MPEP §2107.01. In addition, both claim 22 and

claim 23 also include specific utility as well. Specifically, the computer-readable medium claimed in claim 22 and that claimed in claim 23 may each be used to store a data structure as set forth in these claims for later use or transport. As such, the applicants respectfully submit that the computer-readable medium of claim 22 and the computer-readable medium of claim 23 each satisfy the requirements of 35 U.S.C. §101 as they are both directed to statutory subject matter and each have both substantial and specific utility as described and claimed.

The Examiner has indicated that the claims only list a set of instructions that are saved on a computer-readable medium with no function or use. This statement is not well taken. Specifically, neither claim 22 nor claim 23 are claiming the particular data structure itself, but are instead directed to a computer-readable medium having stored thereon a particular data structure. However, even if these claims were claiming a data structure, it has long been held that data structure claims are perfectly acceptable under current U.S. Patent and Trademark Office practice. Such data structures qualify as an article of manufacture. In this case, the data structure stored on the computer-readable medium of claim 22 and 23 do have utility in that they define a timed wait TCB (TWTCB) used to uniquely identify the connection without requiring the full TCB information to be held in a timed wait state. This specific utility is described on page 15, lines 3-21. As described in MPEP §2107.01, where the applicants have set forth a specific and substantial utility in the originally filed application, "courts have been reluctant to uphold a rejection under 35 U.S.C. §101." Therefore, in view of the long standing acceptability of data structure claims and the specific utility set forth by the applicants in the originally filed application, the applicants respectfully request reconsideration of this ground of rejection and allowance of claims 22 and 23 at an early date.

The Examiner has rejected claims 5, 6, 15 and 16 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has indicated that these claims do not teach a method or a step in a method and therefore do not further limit independent claim 1 from which they depend. This ground of rejection is respectfully traversed. Reconsideration of this ground of rejection and indication of the allowability of claims 5, 6, 15, and 16 at an early date are respectfully solicited.

As with the previous rejection, this ground of rejection is set forth for the first time in the third Office Action in this case against claims that remain in their unamended form as originally filed. As such, the applicants respectfully submit that this application is being subjected to piecemeal examination, which is specifically discouraged by MPEP §707.07(g), and is in contravention of 37 C.F.R. §1.104(b). As such, the applicants respectfully submit that this ground of rejection is improper and should be removed. Reconsideration of this ground of rejection is therefore respectfully solicited.

Further, claim 5 does further limit independent claim 1 by specifying "wherein the step of excluding information not required to identify the client connection to form a TWTCB comprises the step of establishing a TWTCB of the following structure:

```
struct TWTCB {

#ifdef DEBUG
  ulong        twtcb_sig;
#endif
  struct TWTCB   *twtcb_next;
  IPAddr       twtcb_daddr;      // Destination IP address.
  ushort       twtcb_dport;      // Destination port.
  ushort       twtcb_sport;      // Source port.
  uint         twtcb_partition;
  ushort       twtcb_delta;
  ushort       twtcb_rexmittimer;
  Queue        twtcb_TWQueue;  // Place to hold all the timed_waits
  uint         twtcb_flags;
  IPAddr       twtcb_saddr;      // Source IP address.
  SeqNum       twtcb_senduna;
#if 0 // TRIM_TWTCBREMOVE
  SeqNum       twtcb_sendnext;
#else
  struct TWTCB   *twtcb_prev;
#endif
  SeqNum       twtcb_rcvnext;
  uint         twtcb_phxsum;     // Precomputed pseudo-header xsum.
  DEFINE_LOCK_STRUCTURE(twtcb_lock)

  //ulong        twtcb_refcnt;
  //SeqNum       twtcb_sendmax;
```

```
        //uchar         twtcb_state;     // State of this TCB.
        //RouteCacheEntry  *twtcb_rce;    // RCE for this connection.
};"
```

Clearly this dependent claim 5 further limits the method of claim 1 by including a new step comprised within the step of excluding information not required to identify the client connection. As such, the applicants respectfully submit that claim 5 does further limit independent claim 1, and is therefore proper under 35 U.S.C. §112, second paragraph.

In a similar manner, dependent claim 6 further limits independent claim 1 by stating "Wherein the step of excluding information not required to identify the client connection to form a TWTCB comprises the step of establishing a TWTCB of the following structure:

```
struct TWTCB {

#ifdef DEBUG
  ulong    twtcb_sig;
#endif
  struct TWTCB  *twtcb_next;
   IPAddr  twtcb_daddr;          // Destination IP address.
   ushort  twtcb_dport;          // Destination port.
   ushort  twtcb_sport;          // Source port.
   ushort  twtcb_delta;
   ushort  twtcb_rexmittimer;
   IPAddr  twtcb_saddr;          // Source IP address.

  //ulong   twtcb_refcnt;
  //SeqNum  twtcb_sendmax;
   //uchar   twtcb_state;        // State of this TCB.
  //RouteCacheEntry       *twtcb_rce;       // RCE for this connection.

};"
```

As may be seen, this dependent claim 6 is clearly narrower than independent claim 1 by requiring this step of establishing a TWTCB of a given structure as being comprised within the step of excluding information not required to identify the client connection. As such, the applicants respectfully submit that this claim 6 fully comports with the requirements of 35

U.S.C. §112, second paragraph. Reconsideration of this ground of rejection and indication of the allowability of this claim are therefore respectfully solicited.

With regard to claims 15 and 16, the Examiner has indicated that these claims are dependent on independent claim 1. However, claims 15 and 16 are actually dependent on independent claim 11. Claim 15 requires "wherein the step of forming a TWTCB comprises the step of forming a TWTCB having the following structure:

```
                struct TWTCB {

        #ifdef DEBUG
          ulong        twtcb_sig;
        #endif
          struct TWTCB   *twtcb_next;
          IPAddr       twtcb_daddr;      // Destination IP address.
          ushort       twtcb_dport;      // Destination port.
          ushort       twtcb_sport;      // Source port.
          uint         twtcb_partition;
          ushort       twtcb_delta;
          ushort       twtcb_rexmittimer;
          Queue        twtcb_TWQueue;  // Place to hold all the timed_waits
          uint         twtcb_flags;
          IPAddr       twtcb_saddr;      // Source IP address.
          SeqNum       twtcb_senduna;
        #if 0 // TRIM_TWTCBREMOVE
          SeqNum       twtcb_sendnext;
        #else
          struct TWTCB   *twtcb_prev;
        #endif
          SeqNum       twtcb_rcvnext;
          uint         twtcb_phxsum;     // Precomputed pseudo-header xsum.
          DEFINE_LOCK_STRUCTURE(twtcb_lock)

          //ulong        twtcb_refcnt;
          //SeqNum       twtcb_sendmax;
          //uchar        twtcb_state;    // State of this TCB.
          //RouteCacheEntry  *twtcb_rce;    // RCE for this connection.
};"
```

Clearly claim 15 is narrower than claim 11 from which it depends. As such, the applicants respectfully submit that claim 16 is in conformance with the requirements of 35 U.S.C. §112,

second paragraph. Reconsideration of this ground of rejection and indication of the allowability of claim 15 at an early date are respectfully solicited.

Similarly, claim 16 also depends from claim 11, and requires "wherein the step of forming a TWTCB comprises the step of forming a TWTCB having the following structure:

```
struct TWTCB {

#ifdef DEBUG
  ulong    twtcb_sig;
#endif
  struct TWTCB  *twtcb_next;
   IPAddr  twtcb_daddr;          // Destination IP address.
   ushort  twtcb_dport;          // Destination port.
   ushort  twtcb_sport;          // Source port.
   ushort  twtcb_delta;
   ushort  twtcb_rexmittimer;
   IPAddr  twtcb_saddr;          // Source IP address.

  //ulong   twtcb_refcnt;
  //SeqNum  twtcb_sendmax;
   //uchar   twtcb_state;        // State of this TCB.
  //RouteCacheEntry      *twtcb_rce;       // RCE for this connection.

};"
```

The applicants respectfully submit that this claim is also narrower than independent claim 11 from which it depends, and is in conformance with 35 U.S.C. §112, second paragraph. Specifically, while the step of "forming a TWTCB" in claim 11 would cover the formation of all TWTCBs, claim 16 only covers methods including the step of forming a TWTCB having the structure set forth therein. In other words, claim 11 sets forth a generic step while claims 15 and 16 set out specific species of that generic step requiring the formation of a TWTCB having a specific structure. As such, the applicants respectfully submit that claim 16 is in conformance with 35 U.S.C. §112, second paragraph, and is in condition for allowance. Reconsideration of claim 16 and indication of its allowability at an early date are therefore respectfully solicited.

The Examiner has also rejected claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over Coile et al., U.S. Patent No. 6,298,380. This ground of rejection is respectfully traversed. Reconsideration of this ground of rejection and indication of the allowability of claims 1-21 at an early date are respectfully solicited.

The applicants respectfully submit that this new ground of rejection submitted for the first time in this third Office Action for this application has resulted in the applicants being subjected to piecemeal examination. Such piecemeal examination is discouraged by MPEP §707.07(g) and subverts the requirements of 37 C.F.R. 1.104(b). Specifically, the Coile et al. '380 reference has been available to the Examiner and has been cited against the claims of the instant application in combination with the Recio et al. '418 reference since the original Office Action mailed in October of 2003. However, there has been no change to the claims that would justify this new ground of rejection. Further, since this new ground of rejection is not merely duplicative of the previous rejections, the applicants respectfully submit that it should have been presented in the original Office Action mailed over a year ago. Reconsideration of this ground of rejection and indication of the allowability of claims 1-21 at an early date are therefore respectfully solicited.

Further, it is axiomatic in the patent law that to establish a *prima facie* case of obviousness there must be some suggestion or motivation to one of ordinary skill in the art to make the proposed modification, that there must be some expectation of success, and that the prior art reference as modified must teach each and every claim limitation. However, as will be described below, none of these are present in this case.

In an attempt to support the modification to Coile et al. '380, the Examiner has indicated that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Coile et al. '380 "by using a timed wait because doing so would result in the same function which is to wait until all the received packets were acknowledged by the client." The applicants respectfully traverse this statement for two reasons.

First, providing a timed wait does not provide the same functionality as waiting until all received packets were acknowledged by the client. Specifically, since the proxy does not know when the client will acknowledge the received packets, the proxy is unable to set a timed wait

period to correspond exactly thereto. As such, there is no guarantee that all of the received packets will have been acknowledged by the client before the timed wait expires. If the timed wait were set to be much greater than the longest possible time that the client could ever acknowledge the received packets, such would result in unnecessary delay since the control of Coile et al. '380, as described by the Examiner, simply waits until all of the received packets have been acknowledged by the client. As such, it cannot be said that selecting a timed wait provides the same functionality specified by the Examiner, which is to wait until all the received packets were acknowledged by the client. That is, the temporal functionality of the timed wait is completely different to the event driven functionality described by the Examiner as existing in Coile et al. '380. As such, there can be no suggestion or motivation existing in Coile et al. '380. Instead, the only suggestion or motivation of using a timed wait TCB exists in the applicants' own disclosure, which disclosure cannot be used to provide the suggestion or motivation to modify Coile et al. '380 as suggested by the Examiner. Such clearly results in hindsight reconstruction of the prior art, which is specifically prohibited.

Second, there can be no suggestion or motivation to modify the prior art reference if such would modify its principle of operation. In this case, the temporal timed wait functionality relies on a different principle of operation than the even driven functionality set forth by the Examiner. As discussed above, waiting until all of the received packets are acknowledged by the client operates on a different, event driven principle than simply waiting for a time period. As such, the applicants respectfully submit that there can be no suggestion or motivation to modify Coile et al. '380 as suggested by the Examiner because such a modification would change its principle of operation.

Additionally, there can be no reasonable expectation for success of such a system as proposed by the Examiner. Specifically, since the proxy has no control over the acknowledgements transmitted by the client for all of the received packets, picking a fixed time for the timed wait will not likely result in proper operation as described in Coile et al. '380. As stated in Coile et al. '380 in the very column cited by the Examiner (column 13, lines 8-18):

> Irregularities may result when the connection is unproxied if the connection does not reach an appropriate state before unproxying. For example, if the proxy has sent data to the client's side that has not been acknowledged, then the sequence number on the proxy

> side may not correspond to the acknowledgement number on the client side. As a result, the sequence synchronization factor could be incorrectly drived. Also if the proxy were to acknowledge data on one side and not successfully send the data to the other side before unproxying, the data would be lost since it would not be resent by the side that received the acknowledgement.

As stated in this quoted passage, it is critically important for the system of Coile et al. '380 to operate properly that all of the received packets be acknowledged by the client before unproxying the connection. Otherwise, the proper sequence number cannot be guaranteed and irregularities may result. In view of this explicit requirement that the system of Coile et al. '380 wait until all received packets are acknowledged by the client for proper operation, the applicants respectfully submit that there can be no reasonable expectation of success if this reference is modified to simply use a timed wait without regard to the acknowledgements received from the client as proposed by the Examiner. The applicants therefore respectfully submit that claims 1-21 are not rendered obvious by Coile et al. '380 as modified by the Examiner. Reconsideration of claims 1-21 and indication of the allowability thereof at an early date are respectfully solicited.

In addition to the above, a *prima facie* case of obviousness also requires that the reference as modified teach each and every limitation of the claims. However, with regard to independent claim 1, Coile et al. '380 does not teach the closing of a TCP/IP connection. Instead, column 13, lines 50-62 cited by the Examiner merely describes the unproxying of a connection through a cut-through proxy so that the connection is maintained between the client and server. In other words, the TCP/IP connection is not closed, but is merely unproxied. Indeed, the entire sequence described in columns 13 and 14 describes the method that specifically does not close a TCP/IP connection during the unproxying thereof. As described in column 14, lines 27-30, "proper sequencing, acknowledging, and message reconstruction is done by the TCP layer in the client and the server without the cut-through proxy fully terminating a TCP connection to either." The applicants respectfully submit that this statement teaches away from the closing of the TCP/IP connection as required by independent claim 1. As such, the applicants respectfully submit that independent claim 1 cannot be rendered obvious by Coile et al. '380. Therefore, the applicants respectfully request reconsideration and allowance of independent claim 1 and those claims dependent thereon, to wit claims 2-10, at an early date.

Similarly, independent claim 11 requires the step of "closing the at least one TCP/IP connection." As discussed above, Coile et al. '380 does not teach the step of closing a TCP/IP connection, but is instead concerned with unproxying a TCP/IP connection "without the cut-through proxy fully terminating a TCP connection to either." Coile et al. '380, column 14, lines 27-30. Reconsideration of independent claim 11 and those claims dependent thereon, to wit claims 12-17, for this additional reason and indication of the allowability thereof at an early date are respectfully solicited.

Independent claim 18 also requires the step of "closing a TCP/IP connection." As discussed above, the system of Coile et al. '380 specifically precludes the step of closing a TCP-IP connection, and instead is concerned with unproxying a connection between a client and server through a cut-through proxy "without the cut-through proxy fully terminating a TCP connection to either." Coile et al. '380, column 14, lines 27-30. As such, the applicants respectfully submit that Coile et al. '380 cannot render independent claim 18 obvious. Therefore, the applicants respectfully submit that independent claim 18 and those claims dependent thereon, to wit claims 19-21, are in condition for allowance. Reconsideration of claims 18-21 and indication of their allowability at an early date are therefore respectfully solicited for this additional reason.

In view of the above the applicants respectfully submit that claims 1-23 are in condition for allowance. Reconsideration of claims 1-23 and indication of the allowability thereof at an early date are respectfully solicited.

If the Examiner believes that a telephonic conversation will aid in the resolution of any issues not resolved herein, the Examiner is invited to contact the applicant's attorney at the telephone number listed below.

Respectfully submitted,

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Date: November 9, 2004